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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/683,546	01/16/2002	Jerry D. Hayes	BUR920000201	7715

24241 7590 08/14/2003
IBM MICROELECTRONICS
INTELLECTUAL PROPERTY LAW
1000 RIVER STREET
972 E
ESSEX JUNCTION, VT 05452

EXAMINER

THOMPSON, ANNETTE M

ART UNIT	PAPER NUMBER
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2825

DATE MAILED: 08/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

CH

Office Action Summary	Application No. 09/683,546	Applicant(s) HAYES, JERRY D.	
	Examiner A. M. Thompson	Art Unit 2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's Amendment to application 09/683,546 has been examined. The specification is amended. Claims 1-4, 12-15, 19, 23, 28 and 29 are amended. Claims 1-29 are pending.

1. Applicant's Amendment obviates the existing rejections and objections. Additional objections and rejection necessitate the instant second non-final office action.

Drawings

2. Figure 10 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. An examination of the claims of this application reveals that Applicant is unfamiliar with patent prosecution procedure. While an inventor may prosecute the application, lack of skill in this field usually acts as a liability in affording the maximum protection for the invention disclosed. Applicant is advised to secure the services of a registered patent attorney or agent to prosecute the application, since the value of a patent is largely dependent upon skilled preparation and prosecution. The Office cannot aid in selecting an attorney or agent. Examiner has tried to assist Applicant by noting claim objection and rejections. However, the claim objection and 35 U.S.C. 112 rejections are too numerous for this current action to be considered comprehensive.

Applicant is advised of the availability of the publication "Attorneys and Agents Registered to Practice Before the U.S. Patent and Trademark Office." This publication is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

4. If Applicant continues to prosecute the application, revision of the claims to present them in proper form is required. While an application can be amended to make it clearly understandable, no subject matter can be added that was not disclosed in the application as originally filed.

5. Claims 1-29 are objected to for the following reasons: Pursuant to claims 1, 12, and 28 at lines 7-9, Applicant ostensibly claims that obtaining the product of DC impedance/conductance as a function of voltage and a scalar time function results in the representation of switching elements as a voltage time controlled resistor. This is confusing and Examiner is unclear what Applicant means. Applicant is required to either rephrase the claim so that it is clear and precisely worded. For examination purposes, Examiner truncates this limitations and treats it as *representing in the model switching elements as voltage-time controlled resistors*. Additionally, at the last line, Applicant references "each scalar type", but there is no prior indication that there are multiple scalars with separate types.

6. Pursuant to claim 2 and 13, this claim limitation uses the parameter dc_impedance and dc_base without any indication of the meaning of these parameters. Additionally, pursuant to claim 2, at line 2, integrated is misspelled. Pursuant to claim 3 and 14, Applicant reference "the time controlled impedance" and "the time controlled

Art Unit: 2825

conductance" (respectively) and this reference not only lacks antecedent basis, but also lacks structural/functional relationship to the overall claim. Pursuant to claim 4 and 15, at line 2, *resistor* should be plural because the independent claim reference plural resistors. Additionally, the scope and meaning of the claim 4 and claim 15 limitation is unclear. Pursuant to claim 5 and 16, it references "scalars", however, claim 1 only references the use of a single scalar. Pursuant to claim 6 and 17, wave-forms should be one word (without the hyphen). Additionally, claim 6 is confusingly worded. For examination purposes, claim 6 is treated as *"the method of claim 1 also comprising the step of making waveforms for the switching elements periodic"* and claim 17 is treated as *"the method of claim 12 also comprising the step of making waveforms for the switching elements periodic"*. Claims 6 and 17 lacks structural/functional relationship to the rest of the claims as it is unclear how periodic waveforms relate to the switching elements and the remainder of claim 1 and claim 12, respectively. Claims 11 and 22 lacks structural/functional relation between the pre-drive current stage, the decoupling stage, and the rest of claim 1 and claim 12, respectively. Pursuant to claim 20, insert a period after "parasitics". Pursuant to claim 26, at line 2, after "that" insert - -do- -. Pursuant to claim 28, the structural/functional relation between *device_turn_on*; *device_turn_on_base* and the rest of the claim is unclear. Pursuant to claim 29, it is unclear what "dc_impedance(conductance)" means. Pursuant to claim 23, "the conductive elements" lack antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 2825

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claims 1-29 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. Pursuant to claims 1, 12, 28 and 29 the omitted structural cooperative relationships are between input edge arrival times, cycle time, scalar, and switching elements. Pursuant to claims 1, 12, 28, and 29, it is unclear what relation the limitation "embedding in the model equations that are functions of input edge arrival times and cycle time for each scalar type" has to the rest of the claim and further the meaning of the limitation is unclear. Therefore, for examination purposes this limitation is not treated. Pursuant to claim 23, the omitted structural cooperative relationships are between the switching elements, non-switching elements, input stage, and output.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2825

11. Claims 1, 12 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by the P. Tehrani et al. paper (the Tehrani paper) entitled Extraction of Transient Behavioral Model of Digital I/O Buffers from IBIS.

12. Pursuant to claims 1 and 12 which recites a method for creating a model of the inputs and outputs of an integrated circuit (the Tehrani paper discloses a method for extraction and simulation of transient behavioral models of state transition of digital I/O buffers using IBIS modeling data), representing the output characteristics the I/O structures as switching or non-switching (see Figure 1); tabulating the output characteristics for each of the elements by applying a DC voltage source on the input of the driver circuit and measuring the current through each element (Figure 3); representing in the model switching elements as voltage-time controlled resistors (Figure 7).

13. Pursuant to claim 23, which recites a circuit to model integrated circuits with switching elements connected serially as voltage-time controlled resistors; non-switching elements connected serially as resistors, each of the switching elements tied to an input stage and both the switching and non-switching elements tied to an output (see Figure 7 which embodies the limitations of this claim).

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please reference the PTO-892 for a complete listing.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to A.M. Thompson whose telephone number is (703) 305-

7441. The Examiner can usually be reached Monday thru Friday from 8:00 a.m. to 5:00 p.m.. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Matthew S. Smith, can be reached on (703) 308-1323.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956 or the Customer Service Center whose telephone number is (703) 306-3329.

15. Responses to this action should be mailed to:


Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

or faxed to:

(703) 872-9318, (for **OFFICIAL** communications intended for entry)

(703) 872-9319, (for Official **AFTER-FINAL** communications)

Hand-delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place, Arlington, VA., Fourth Floor (Receptionist).



A. M. THOMPSON
Master's Level Patent Examiner